

Lisa Liff BS, Mahlet Mekonnen BS, Anubhav Chandla, Natalie Mahgerefteh, Quinton Gopen MD, Isaac Yang MD

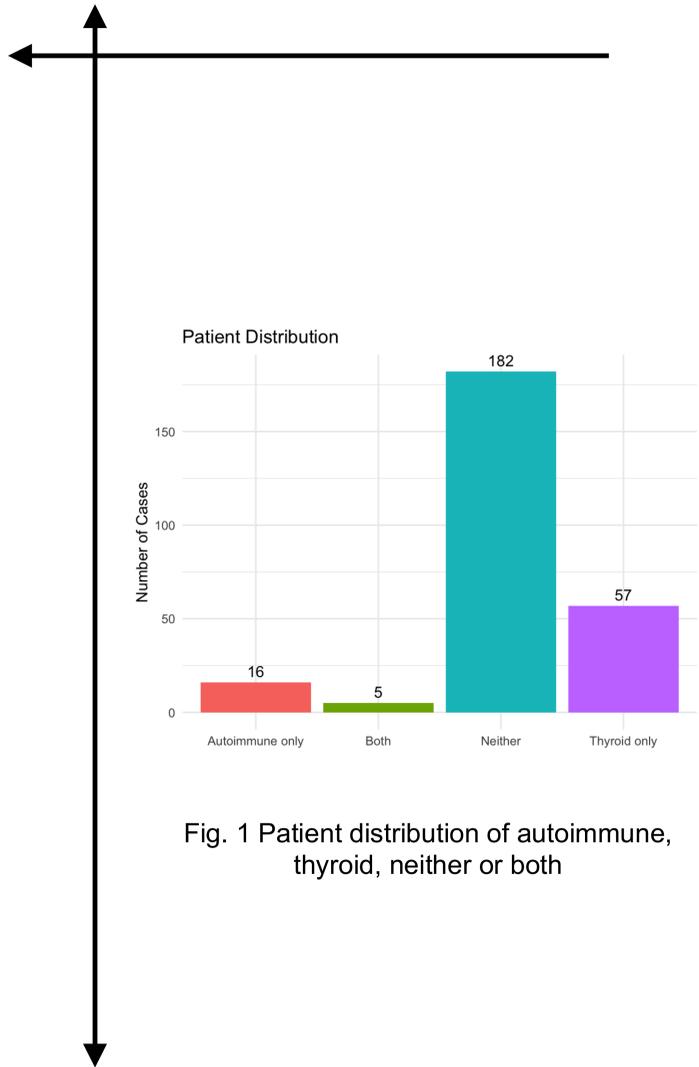


Fig. 1 Patient distribution of autoimmune, thyroid, neither or both

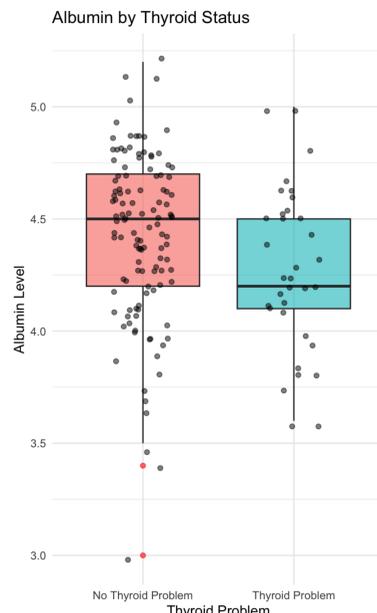


Fig. 2 Albumin levels stratified by presence of thyroid problem or absence. Patients with a thyroid problem had a significantly lower mean serum albumin level ( $p = .027$ )

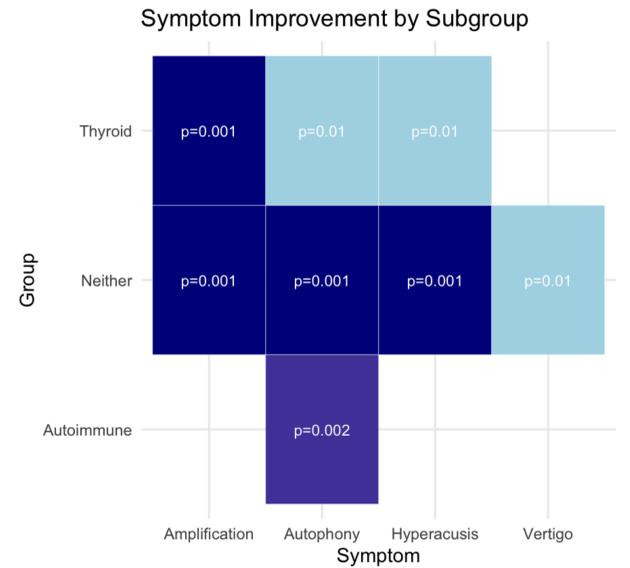


Fig. 3 Symptom improvement stratified within the thyroid, autoimmune, or neither group highlighting statistically significant improvement

## Introduction

Superior semicircular canal dehiscence (SSCD) is an audiovestibular disorder due to a bone defect in the middle cranial fossa. Given known associations between autoimmune disorders, bone integrity, and auditory dysfunction, we investigated whether symptom resolution post-SSCD surgery differs in patients with autoimmune comorbidities.

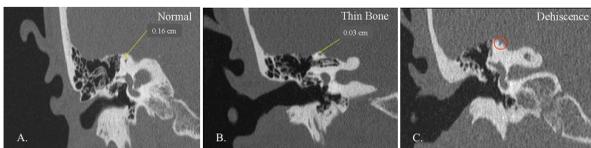


Fig. 4 Coronal CT scans of the roof of the SSC and the cranial cavity showing normal compared to SSCD

## Methods and Materials

A retrospective chart review was conducted for 250 cases treated with SSCD repair. Symptom resolution following middle cranial fossa craniotomy was evaluated. Fisher's exact ( $p < .05$ ) and one-tailed binomial tests assessed whether symptom improvement in patients with autoimmune or thyroid disorders exceeded chance ( $p > 0.5$ ).

## Results

Of the 250 cases, 16 had an autoimmune disorder, 57 had a thyroid pathology, and 5 had both. Within the 182 cases with neither an autoimmune disorder nor a history of thyroid, there was significant improvement in autophony ( $p = .001$ ), amplification ( $p = .001$ ), hyperacusis ( $p = .001$ ), and vertigo ( $p = .01$ ). However, those with an autoimmune disorder only showed resolution in autophony ( $p = .002$ ). Those with a history of thyroid had improvement in amplification ( $p = .001$ ), hyperacusis ( $p = .01$ ), and autophony ( $p = .01$ ). Additionally, bilateral SSCD patients had a significantly lower mean serum albumin level ( $5.03 \pm 0.24$ ;  $n = 28$  (72%),  $p = 0.018$ ). Patients with a thyroid problem had significantly lower mean serum albumin level ( $4.26 \pm .36$ ;  $p = .027$ ).

## Conclusion

Autoimmune comorbidities may contribute to SSCD pathophysiology and rate of symptom resolution post-SSCD repair. These findings highlight the prevalence of bilateral SSCD may be due to abnormal bone mineral density while suggesting the need to incorporate autoimmune evaluation and management into the preoperative assessment and postoperative care of SSCD patients. Additional research is needed to further parse out the relationship between autoimmune disorders and SSCD on symptom resolution.

## Acknowledgements

Yang lab and the supportive faculty and staff at UCLA



## Contact

Lisa Liff  
UCLA DGSOM Dept. of Neurosurgery  
lliff@mednet.ucla.edu  
(801) 648-5076